ABSTRACT

A method for determining the three-dimensional surface of an object comprises the phases of: defining (1) the coordinates of a plurality of points of said object; defining (2) a three-dimensional matrix of cells that contains said object to which a value can be associated; determining (3) the distance between each centre of said cells of said three-dimensional matrix of cells and the closest point of said plurality of points of said object; setting (4) the value of several cells of said three-dimensional matrix of cells at a first preset value; determining (7) the value that each cell of said three-dimensional matrix of cells assumes, with the exception of said several cells, by means of the following formula

$$F(\bar{x}_i, t+1) = \frac{F(\bar{x}_i, t) \cdot v_i + w \cdot \sum_j F(\bar{x}_j, t) \cdot v_j}{v_i + w \cdot \sum_j v_j}$$

where $\bar{x}_i$ represents the coordinates of the centre of the i_th cell,

$F(\bar{x}_i, t)$ represents the value of the i_th cell at time t,

v_i represents said distance,

w represents a second preset value, and

j indicates a neighbourhood of cells of the i_th cell;

determining (9) the sum in module of the variations of the value of each cell between the time t and the time $t+1$; repeating (10) said phase of determining the value that each cell of said three-dimensional matrix of cells assumes if said sum is greater than a third preset value. (Fig. 1).